Mrd 04/04/02 CLMPTO

1-12 (cancelled).

13. (New) A method for estimating a memory-enabled transmission channel, comprising the steps of:

determining a first estimation $\hat{\underline{h}}$ of a pulse response of the memory-enabled transmission channel;

performing an estimation of an additive interference of the memory-enabled transmission channel; and

performing a correction of the first estimation while taking into consideration the estimation of the additive interference.

14. (New) The method according to claim 13, wherein:

the step of determining the first estimation is performed by a matched filter.

15. (New) The method according to claim 14, wherein:

the matched filter is given by

$$\hat{\underline{h}} = \frac{1}{\gamma} \cdot G^{*T} \cdot \underline{e}_{M},$$

where

$$G = \begin{pmatrix} r_W & r_{W-1} & \cdots & r_1 \\ r_{W+1} & r_W & & r_2 \\ \vdots & \vdots & & \vdots \\ r_{W+N-1} & r_{W+N-2} & \cdots & r_N \end{pmatrix}$$

and

13. (New) A method for estimating a memory-enabled transmission channel, comprising the steps of:

determining a first estimation $\hat{\underline{h}}$ of a pulse response of the memory-enabled transmission channel;

performing an estimation of an additive interference of the memory-enabled transmission channel; and

performing a correction of the first estimation while taking into consideration the estimation of the additive interference.

14. (New) The method according to claim 13, wherein:

the step of determining the first estimation is performed by a matched filter.

15. (New) The method according to claim 14, wherein:

the matched filter is given by

$$\hat{\underline{h}} = \frac{1}{\gamma} \cdot G^{*T} \cdot \underline{e}_{zr},$$

where

$$G = \begin{pmatrix} r_W & r_{W-1} & \cdots & r_1 \\ r_{W+1} & r_W & & r_2 \\ \vdots & \vdots & & \vdots \\ r_{W+N-1} & r_{W+N-2} & \cdots & r_N \end{pmatrix}$$

and

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19. (New) The method according to claim 13, wherein:

the correction of the first estimation $\hat{h}_k$ of the k^{th} component, $k \in \{1,\ldots,W\}$, of estimation vector $\hat{\underline{h}}$ of the pulse response $\underline{h}$ is given by

$$\hat{h}'_k = \begin{cases} 0, \text{ if } \hat{h}_k^2 < \sigma^2/\gamma \\ \text{otherwise } \hat{h}_k \end{cases}$$

20. (New) The method according to claim 13, wherein:

the correction of the first estimation $\hat{h}_k$ of the k^{th} component, $k \in \{1,\ldots,W\}$, of estimation vector $\hat{\underline{h}}$ of the pulse response $\underline{h}$ is given by

$$\hat{h}'_k = \sqrt{\theta\left(\hat{h}_k^2 - \sigma^2/\gamma\right)} \cdot \hat{h}_k/|\hat{h}_k|, \quad \text{if } \hat{h}_k \neq 0, \text{ and}$$

otherwise

$$\hat{h}'_k = 0$$

21. (New) The method according to claim 13, wherein:
the correction of the first estimation is given by a POCS algorithm.

22. (New) The method according to claim 13, wherein:
the correction of the first estimation is given by a MMSE algorithm.

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23. (New) The method according to claim 22, wherein:

the MMSE algorithm is given by

$$\hat{\underline{h}} = \left(G^{*T} \cdot G + \sigma^2 \cdot I\right)^{-1} \cdot G^{*T} \cdot \underline{e}_{sT}$$

I being the unit matrix.

24. (New) A device for estimating a memory-enabled transmission channel, comprising:

a channel estimator;

an estimator of an additive interference, the channel estimator and the estimator of the additive interference act on a received signal; and

a channel estimation correcting element for correcting a signal of the channel estimator while taking into consideration an output signal of the estimator of the additive interference.